ABSTRACT

The present invention is an automated endoscopic device and diagnostic method, which performs at least one other disease detection method simultaneously during a white light endoscopic procedure. In some embodiments fluorescence imaging or spectroscopy is performed during the white light examination. In other embodiments, multi-modal imaging and/or spectroscopy may be performed and combined in a variety of ways. Because diagnostic modes other than white light are performed transparently in the background, the procedure is not significantly more complex for the clinician than the familiar white light examination. In some embodiments the present invention automatically detects suspicious tissue and informs the clinician of its presence. In other embodiments the present invention helps determine if a biopsy is required, and may further assist the clinician, for example, by providing an outline or otherwise guide the clinician in identifying and/or taking a biopsy of a suspicious site. In yet other embodiments, the present invention includes refinements afforded by incorporating *a priori* information, for example, patient history, previous endoscopy data, the results of qualitative and/or quantitative sputum cytology etc.

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